

# Center for Developmental and Molecular Biology (CDMB)

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Established in 1993 to facilitate product development, supplement near-term research, stimulate additional patent development and increase the commercialization process of current near-term products.

Overview	Technologies	Status	Economic Impact
<p>1994-95 State Contract \$107,480</p> <p>Matching Funds \$244,162</p> <p>Cumulative \$366,240</p> <p>Center Related Jobs 13</p> <p>Industry Jobs Created 0</p> <p>Benefiting Utah Companies:</p> <p>1994 Spin-off companies 0</p> <p>Cum. Spin-off companies 0</p> <p>Patents Applied 1</p> <p>Patents Issued 0</p> <p>License Agreements 0</p>	<p>• <b>Primary cell culture medium development.</b> Researchers at HyClone Lab, Inc. working in conjunction with scientists at USU have developed a lymphocyte culture fluid that outperforms all other culture media in the culture of lymphocytes and embryos. It is anticipated research by CDMB that result in development of additional formulations to enable culture of other cells which are currently difficult to culture.</p> <p>Marketable products: Tumor infiltrating lymphocyte medium cells transfected with the lytic peptide gene for treatment of several types of tumors; in vitro embryos and embryonic stem cells; medium to support the establishment and maintenance of embryonic and hemopoietic stem cells in vitro.</p> <p>• <b>Lytic peptide expression and expression vector design.</b> Researchers at USU have evaluated, developed, synthesized and characterized several synthetic chemotherapeutic peptides referred to as lytic peptides. These peptides have been shown to be effective against a number of disease states that currently are either very difficult or impossible to treat with conventional therapy. Research focuses on the enhanced disease resistance of animals, plants and fish by the transfer and expression of lytic peptide genes as well as immunomodulation of lymphocytes by lytic peptide gene therapy for treatment of certain tumors. Two additional related patents are being developed and prepared for application.</p>	<p>• <b>Lytic peptide.</b> Studies are underway attempting to transfect bovine, ovine and murine lymphocytes with a lytic peptide construct. Several transgenic mice carrying the lytic peptide construct have been produced and are currently being evaluated for expression. A B-casein regulatory construct has been developed which can be induced to product CAT in mammary culture cells.</p> <p>• <b>Embryo culture.</b> Dr. Polejaeva has been hired with COEP funds and has extensive background in embryonic stem cell isolation and culture.</p> <p>• <b>Lymphocyte culture.</b> Research is continuing to evaluate additional modifications in lymphocyte culture medium.</p> <p>• <b>Working with SBDC</b> consultant to establish commercialization plan.</p>	<p>• It is anticipated that HyClone Laboratories will begin marketing LCF/ECF in 1994.</p> <p>• Center is also discussing research agreements with several companies relating to lytic peptide construct which may lead to licensing agreements.</p>